The sources and factors of tuberculosis transmission at hospital for sustainable indoor air

Abstract

The Sick Building Syndrome is often related to poor indoor air quality. Healthy indoor environment is needed for a healthy hospital building. Appropriate design elements need to be implemented to accommodate the mass usage of a hospital's various facilities. Tuberculosis (TB) is an infectious disease most commonly caused by Mycobacterium tuberculosis (MTB) which can spread via inhalation of infected aerosols. Therefore, Health Care Workers (HCWs) in a hospital are most vulnerable to TB infection. This paper explicates the sources and factors of TB transmission in the indoor environment of Hospital Sultanah Aminah Johor Bahru, Johor, Malaysia (HSAJB). The study considered the relationship between the physical layout of the TB ward and its indoor air environment quality. This study utilized the opinions from HCWs who are directly exposed to this kind of environment. The data were obtained from face-to-face questionnaire surveys. The questionnaire used the Likert Scale with five ordinal measures of agreement. From the study, it was found that the source of TB transmission is from positive MTB carriers or active TB patients. Ten factors that control the indoor air environment sustainability (IAES) of TB ward are relatively connected to space area design of TB ward.